O.P.Code: 19EE0240 | R19 | H.T.No.

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech II Year I Semester Supplementary Examinations June-2024
BASIC ELECTRICAL & ELECTRONICS ENGINEERING
(Mechanical Engineering)

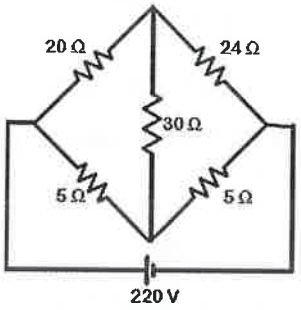
Time: 3 Hours **Max. Marks: 60**

*(Answer all Six Units, 6*10=60 Marks)*

PART-A

UNIT-I

1		Find the current delivered by the source for the circuit shown in figure.	CO1	L3	10M

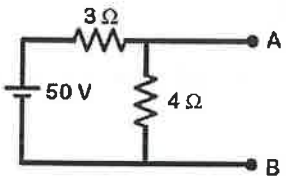


OR

2	a	State and explain Ohm's law.	CO1	L2	5M
	b	Explain in detail about passive elements.	CO1	L2	5M

UNIT-II

3	a	State Norton's theorem.	CO2	L1	2M
	b	Find Norton's equivalent circuit across AB for the circuit shown.	CO2	L3	8M



OR

4		Explain in detail about admittance or 'Y' parameters with an example.	CO2	L2	10M

UNIT-III

5	a	Derive Torque equation of a dc motor.	CO3	L3	5M
	b	The counter emf of Shunt motor is 227 V. The field resistance is 160Ω and field current 1.5A. If the line current is 36.5A, find the armature resistance also find armature current when the motor is stationary.	CO3	L3	5M

OR

6		Explain in detail about various transformer losses.	CO3	L2	10M

PART-B

UNIT-IV

7	a	What is Doping? Explain P and N-type semiconductors in detail.	CO4	L2	5M
	b	Explain Drift and Diffusion currents in a PN Junction Diode.	CO4	L2	5M

OR

8	a	Explain the working principle of Full Wave Rectifier. Draw its input and Output waveforms.	CO4	L2	5M
	b	Derive the expression for Ripple factor and Efficiency of Full Wave Rectifier.	CO4	L3	5M

UNIT-V

9	a	Explain the operation of PNP transistor with a neat diagram.	CO5	L2	5M
	b	Explain the various types of circuit configurations, which can be obtained from a bipolar junction transistor?	CO5	L2	5M

OR

10	a	Explain in detail about the transistor working as a amplifier.	CO5	L2	5M
	b	Write the applications of a transistor and also explain when it is acting as a switch?	CO5	L2	5M

UNIT-VI

11	a	Explain the construction and principle of operation of N-channel JFET.	CO6	L2	5M
	b	Explain the transfer characteristics of JFET.	CO6	L2	5M

OR

12	a	Write the applications of MOSFET.	CO6	L1	5M
	b	Explain the static characteristics of MOSFET and draw its characteristics.	CO6	L2	5M

***** END *****